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| 09/777,504 | 02/05/2001 | Gregory Robert Roelofs | US010024 | 8342 |

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EXAMINER

DAY, HERNG DER

ART UNIT PAPER NUMBER

2128

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,504

Applicant(s)

ROELOFS, GREGORY ROBERT

Examiner

Herng-der Day

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005 and 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Applicant's Amendment ("Amendment") to Office Action dated September 13, 2004, mailed February 14, 2005, received by PTO February 17, 2005, and Applicant's Amendment to Office Action dated June 15, 2005, mailed October 11, 2005, received by PTO October 13, 2005.

1-1. Claims 14-20 have been withdrawn from consideration due to restriction. Claims 1-13 are pending.

1-2. Claims 1-13 have been examined.

Drawings

2. The replacement sheet of FIG. 2 received on February 17, 2005, is acceptable.

3. The formal drawing of Figure 6 received on February 20, 2002, is objected as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: decision step 227 as described at page 10, line 17. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicants will be notified and informed of any

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required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Abstract

4. The Examiner has acknowledged without objection that the abstract has been amended.

Specification

5. The disclosure is objected to because of the following informalities:

Appropriate correction is required.

5-1. It appears that “the sensor 12”, as described in lines 12-13 of page 9, should be “the sensor 16”.

5-2. It appears that “the circuit board 80”, as described in line 22 of page 10, should be “the circuit board 81”.

5-3. It appears that “the computer 16”, as described in line 25 of page 10, should be “the computer 18”.

5-4. It appears that “The computer 16”, as described in lines 25-26 of page 11, should be “the computer 18”.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 6 recites the limitation, “the sensor comprises a magnetic sensing board capable of reading the position and magnetic signature of each mounted component”. However, as described at page 12, lines 20-23, “The board 52 of the sensor 16 is capable of reading a magnetic signature identification label 24 of each building component 14 mounted on the baseboard 12, as well as sensing the location and orientation of the building component 14 on the board 52”, no details have been disclosed regarding how to make the magnetic sensing board read the position and magnetic signature of each mounted component in the specification.

Recommendations

8. Claim 3 recites the limitations “the projecting contact points” in line 7 and “the holes” in line 8 of the claim. For clarification purposes, the Examiner suggests that “the projecting contact points” be replaced with “the projecting electrical contact points” and “the holes” be replaced with “the electrical contact holes”.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Aish, U.S. Patent 4,275,449 issued June 23, 1981.

10-1. Regarding claim 1, Aish discloses a system for creating a virtual model, to be displayed on a computer driven display, of a physical structure comprising:

a baseboard (FIG. 1 shows a baseboard 10, column 4, line 8);

at least one sensor providing sensor data (Signal connections, such as SIG, column 4, lines 13-21);

at least one component capable of being sensed by the sensor, each component being mountable on the baseboard (elements are added on the baseboard, column 4, lines 8-13);

a computer interface (connector 13, column 4, lines 21-23) for coupling the sensor to a computer (control console 20, column 4, lines 24-29), the computer determining the position and dimensions of each component mounted on the baseboard based on the sensor data (an element is connected at the respective position on the base board 10, column 4, lines 25-29), and the computer creating a virtual model to be displayed on a computer display of a structure representative of an arrangement of the components when mounted on the baseboard (to generate a display of the physical characteristics, column 5, lines 29-43).

10-2. Regarding claim 2, Aish further discloses each component comprises a material capable of being sensed by the sensor when the component is mounted on the baseboard, and includes

an identification label capable of being sensed by the sensor (an address may be associated with an element, column 6, lines 27-44);

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wherein the sensor data comprises identification data sensed from the identification label and location and orientation data for each component sensed (to determine the form of the element and its properties and identity, column 4, line 67, through column 5, line 6); and

wherein the sensor data is stored by one of the computer and the sensor (recorded in the control console, column 5, lines 11-15).

10-3. Regarding claim 3, Aish further discloses each component is formed of a nonconductive material and further comprises at least one projecting electrical contact point formed of a conductive material (electrical contacts, column 8, lines 3-4); and

wherein the sensor comprises a circuit board providing an array of electrical contact holes at predetermined positions (A wiring layout or circuits 12 connects together the connector-part sets 11 into which elements are plugged, column 4, lines 13-19); and

wherein each of the projecting contact points of each of the components is receivable within each of the holes for making electrical contact with the circuit board (A wiring layout or circuits 12 connects together the connector-part sets 11 into which elements are plugged, column 4, lines 13-19).

10-4. Regarding claim 4, Aish further discloses one of the sensor and the computer store property data associated with the identification data for each component, and wherein the property data comprises data representative of the dimensions and shape of the component (to store machine readable information identifying its respective distinctive form, column 2, lines 11-13).

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10-5. Regarding claim 5, Aish further discloses the identification label of each component comprises an electronic signature (an address may be associated with an element, column 6, lines 27-44); and

the sensor is a circuit board capable of sensing the position of each mounted component and its electronic signature (establishes the address of the element at a particular baseboard position, column 6, lines 27-44).

10-6. Regarding claim 7, Aish further discloses the sensor is formed on the top surface of the baseboard, and wherein the circuit board is covered with a nonconductive covering having an array of holes placed at predetermined positions for exposing an array of electrical contact points on the circuit board (A wiring layout or circuits 12 connects together the connector-part sets 11 into which elements are plugged, column 4, lines 13-19).

10-7. Regarding claim 8, Aish further discloses the sensor is connected to a power source and accesses a voltmeter for testing for a positive voltage, an ammeter for determining current at contact points having a positive voltage, a switching network and a processor receiving data from the voltmeter and for controlling the voltmeter, ammeter and the switching network (the machine (control console) has scanned and read the arrangement directly, column 5, lines 29-43; V+ and V– lines as shown in Fig. 6 and Fig. 7; switching devices, column 7, lines 5-16).

10-8. Regarding claim 9, Aish further discloses each component has two associated electrical contact points (electrical contacts, column 8, lines 3-4), and

wherein each electrical contact point of each component comprises a plurality of conductors wherein each of the conductors in one of the electrical contact points is in one to one

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paired correspondence with one conductor in the associated contact point (For example, as shown in Fig. 6, each corresponding connector 31 and 32 and connected through conductors);

wherein each electrical contact hole on the circuit board has a plurality of conductors (For example, as shown in Fig. 7, the baseboard electric circuit module 14 has multiple conductors); and

wherein electrical contact between a contact point of a mounted component and a contact hole of the circuit board comprises one to one electrical contact between the plurality of conductors in the contact point of the mounted component and the plurality of conductors in the contacted contact hole of the circuit board (For example, each connector 11 of the baseboard electric circuit module 14 as shown in Fig. 7 is ready for the one to one electrical contact with the corresponding connector 31 of the element 30 as shown in Fig. 6).

10-9. Regarding claim 10, Aish further discloses the sensor data comprises the location of contact points on the circuit board having electrical contact with associated contact points of mounted components and current values read by the ammeter for associated contact points (an indication that an element is connected at the respective position on the base board 10, column 4, lines 25-29).

10-10. Regarding claim 11, Aish further discloses the paired conductors in each component are independently electrically connected, each electrical connection comprising at least one resistor selected from a predetermined group of possible resistors; and wherein an identification label of each component is comprised of the selected resistance (circuits as shown in Fig. 6 implicitly including resistance).

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10-11. Regarding claim 12, Aish further discloses each component comprises two electrical contacts, each electrical contact comprises three conductors, and each electrical connection between paired conductors comprises one resistor (the various element forms and features of FIGS. 1 to 5 can be used in various combinations, column 6, lines 45-62).

Allowable Subject Matter

11. Dependent claim 13 is not taught by the prior art on record and objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's Arguments

12. Applicant argues the following:

(1) "Neither Anderson nor Cohen provides any suggestion or motivation for any combination thereof or modification of the Anderson modeling system" (page 8, paragraph 2, Amendment).

(2) "there is no teaching or suggestion in Anderson, Cohen, or combination thereof, of resistors as recited in independent claim 14, as well as in dependent claims 11 and 17; or voltmeter, ammeter and a switching network as recited in independent claim 18; or applying and measuring various voltages as recited in independent claim 19, as well as in dependent claim 8" (page 10, paragraph 3, Amendment).

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(3) “Anderson, Cohen, or combination thereof, do not teach or suggest that ‘the identification label for each component comprises a magnetic signature’” (page 11, paragraph 3, Amendment).

Response to Arguments

13. Applicant’s arguments (1) - (3) have been fully considered but are moot in view of the new ground(s) of rejection. The rejections of claims 1-20 under 35 U.S.C. 103(a) in Office Action dated September 13, 2004, have been withdrawn.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to Applicant’s disclosure.

Reference to Shackelford, U.S. Patent 6,443,796 B1 issued September 3, 2002, is cited as disclosing smart blocks.

Reference to Frankel et al., U.S. Patent 6,526,375 B1 issued February 25, 2003, and filed April 23, 1999, is cited as disclosing a distributed computer system comprising self-describing building blocks.

Reference to Goh et al., U.S. Patent Application Publication 2004/0096812 A1 published May 20, 2004, and filed January 2, 2001, is cited as disclosing a breadboard for building and displaying electronic circuits.

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15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
January 9, 2006 H.D.

Thai Phan
Patent Examiner
Au: 2128